

NEW SPECIES AND COMBINATIONS IN *BELLOA* (INULEAE-ASTERACEAE)

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ABSTRACT-- Three new species of *Belloa* (Asteraceae) are described from Perú: *B. turneri* Sagást. & Dillon, *B. spathulifolia* Sagást. & Dillon, and *B. plicatifolia* Sagást. & Dillon; and the following combinations are made: *B. cerrateae* (Ferreyra) Sagást. & Dillon, *B. longifolia* (Cuatr. & Arist.) Sagást. & Dillon, *B. pickeringii* (A. Gray) Sagást. & Dillon, and *B. radians* (Benth.) Sagást. & Dillon.

Botanical exploration in the Andes of northern Perú continues to yield new Asteraceae. In preparation for an upcoming treatment of the Inuleae (Asteraceae) for the Flora of Peru, the following species descriptions and combinations are made.

Belloa turneri Sagást. & Dillon, sp. nov. Fig. 1.

Herbae perennes usque ad 20 cm altae; caules erecti simplices, dense sericeo-lanati. Folia basalia sessilia, rosulata, oblongo-lanceolata vel lineari-lanceolata, 2-4 cm longa, 3-5 mm lata, coriacea, marcescentia, bicoloria, basi attenuata, apice acutae, inferne argenteo-tomentosae, superne lanuginosae, margine integrae; folia caulina, alterna, sessilia, linearia vel lanceolata, 1-3 cm longa, 1.5-3 mm lata, margine integra. Capitulescentiae spiciformes, bracteatae. Capitula disciformia, 5-6 mm alta, ca. 5 mm lata; phyllaria ca. 25, ca. 4-seriata, externa ovata, 3.5-4.5 mm longa, 2.5-3.5 mm lata, intima linearia vel oblongo-linearia, 5-6 mm longa, 1-2 mm lata. Flores marginales feminei, pluriseriati; corollae filiformes, ca. 3.5 mm longae. Flores disci hermaphroditi 10-12; corollae anguste tubulosae, 3-3.5 mm longae. Achaenia oblonga, ca. 1 mm longa, glabra, glandulosa; pappi setae ca. 4 longae, basi connatae, albae.

TYPE: PERU. Dept. Cajamarca. Prov. Contumazá: alrededores del Pozo Kuán, ladera, 3600-3800 m, 13 Jun 1981, A. Sagástegui A., E. García A., S. López M. & J. Mostacero L. 10087 (HUT, holotype; F, HUT, MO, TEX, isotypes).

Perennial herbs to 20 cm tall; stems erect, unbranched, cylindrical, densely sericeous-lanose. Basal leaves sessile, rosulate, oblong-lanceolate to linear-lanceolate, 2-4 cm long, 3-5 mm wide, coriaceous, marcescent, discolorous, basally attenuate, apically acute, mucronulate, parallel-nerved, the lower surface silvery-tomentose, the upper surface lanuginous, the margins entire, the cauline leaves alternate, sessile, linear to lanceolate, 1-3 cm long, 1.5-3 mm wide, the margins entire. **Capitulescences** spiciform, bracteate. **Capitula** disciform, 5-6 mm high, 5 mm wide; involucre campanulate; phyllaries ca. 25, ca. 4-seriate, imbricate, stramineous, the outer ovate, 3.5-4.5 mm long, 2.5-3.5 mm wide, concave, lanuginous, acute, the inner linear to oblong-linear, 5-6 mm long, 1-2 mm wide, planar, glabrous, apically acute; marginal florets pistillate, pluri-seriate, the corollas filiform, ca. 3.5 mm long; disc florets hermaphroditic, 10-12, the corolla narrowly tubular, 3-3.5 mm long. **Achenes** oblong, ca. 1 mm long, brownish, glabrous, glandular; pappus bristles ca. 4 mm long, fused basally, white.

DISTRIBUTION: Frequent in open areas within "jalca" formations of northern Perú (Departments of Ancash and Cajamarca, 3100-3800 m) and southern Ecuador (Province of Loja, 2400-2600 m).

Belloa turneri is distinctive within the genus, possessing rosulate basal leaves and robust, erect, spicate capitulescences. It most closely resembles B. lopezmirandae Cabr. of Dept. La Libertad, Perú; however, the latter has smaller capitula with cylindrical involucre and fewer florets (ca. 20 pistillate, 1-2 hermaphroditic). It is known by the local name of "champito" in Ancash.

We take great pleasure in naming this species for Dr. Billie L. Turner of the University of Texas at Austin, a noted synantherologist and contributor to the Flora of Peru.

Additional material examined: ECUADOR. Prov. Loja: Catacacha, 2400-2600 m, 17 Apr 1944, Solís 7949 (F). PERU. Dept. Ancash. Prov. Huaraz: Cerro San Cristóbal, 3800 m, 8 Jul 1977, Evangelista s.n. (F, HUT, MO). Dept. Cajamarca. Prov. Contumazá: Pampa de la Sal, 3500 m, 27 Jun 1983, Sagástegui, Mostacero & Alvitez 10731 (F, HUT, MO); Prov. San Miguel: Taulis Alto (jalca), 3100 m, 20 Jun 1980, Sagástegui, Mostacero & Alvitez 9547 (F, HUT, MO).

***Belloa spathulifolia* Sagást. & Dillon, sp. nov. Fig. 2.**

Species haec a *Belloa longifolia* (Cuatr. & Arist.) Sagást. & Dillon foliis anguste spathulatis 2-4 mm latis differt. Capitula disciformia, flosculis femineis 15-16, corollis ca. 4 mm longis, pappis ca. 4 mm longis.

TYPE: PERU. Dept. La Libertad. Prov. Santiago de Chuco: entre Chota Motil y Shorey, jalca, 3200 m, 6 Dec 1984, A. Sagástegui A., J. Mostacero L. & M. Diestra Q. 11695 (HUT, holotype; F, MO, isotypes).

Cespitose, perennial **herbs** to 3 cm; rhizomes oblique, roots filiform. **Leaves** sessile, rosulate, spathulate to oblanceolate-spathulate, 2-3.5 cm long, 2-4 mm wide, coriaceous, marcescent, expanded basally and partially sheathing the stem, both surfaces densely silvery-tomentose, the margins entire. **Capitulescences** solitary or 2-3-headed glomerule, sessile. **Capitula** disciform, 7-8 mm high, ca. 5 mm wide; involucres narrowly campanulate; phyllaries ca. 24, 4-seriate, imbricate, stramineous, the outer ovate, ca. 4 mm long, ca. 2 mm wide, lanuginous, obtuse, the inner linear-oblong, 7-8 mm long, ca. 2 mm wide, glabrous, obtuse; marginal florets pistillate, 15-16, the corollas filiform, ca. 4 mm long, the style branches exerted; disc florets hermaphroditic, ca. 10, the corollas narrowly tubular, ca. 5 mm long. **Achenes** obovate to oblong, ca. 1 mm long, brown, glabrous, glandular; pappus bristles ca. 4 mm long, fused basally, white.

DISTRIBUTION: Infrequent in open spaces between clumps of *Stipa ichu* within the "jalca" formations of northern Perú (Department of La Libertad, 3100 m).

Belloa spathulifolia most closely resembles *B. longifolia* with its cespitose, rosulate habit; however, the latter has much wider leaves (6-10 mm), larger capitula and more numerous pistillate florets (ca. 80).

***Belloa plicatifolia* Sagást. & Dillon, sp. nov. Fig. 3, F-K.**

Herbae perennes usque ad 5-20 cm altae; caules erecti vel adscendentes, ramosi, foliacei. Folia alterna, disticha, sessilia, orbicularia vel suborbicularia, 5-14 mm longa, 3-7 mm lata, plicata, marcescentia, basi attenuata, subamplexicaulia, apice rotundata, utrinque dense lanata. Capitulescentiae solitaires, e foliorum axillis superioribus natae. Capitula disciformia, (6-) 7-8 (-9) mm alta, 3-4 mm lata, subsessilia; phyllaria 15-20, 4-5-seriata, exima ovata, 4-6 mm longa, 3-4 mm lata, apice subacuta, intima linearia vel lanceolata, 7-8 mm

longa, 1-1.5 lata, apice acuta. Flores marginales feminei 12-14, uniseriati; corollae filiformes, 4-5 mm longae. Flores disci hermaphroditi ca. 10; corollae anguste tubulosae, 4-5 mm longae. Achaenia obovata vel oblonga, 1-1.5 mm longa, glabra, glandulosa; pappi setae 5-6 mm longae, basi connatae, albae.

TYPE: PERU. Dept. Cajamarca. Prov. Contumazá: Cascabamba, arriba de Contumazá, ladera, 3200 m, 14 Jun 1981, A. Sagástegui A., E. García A., S. López M. & J. Mostacero L. 10117 (HUT, holotype; F, HUT, MO isotypes).

Perennial herbs to 5-20 cm tall; stems branched, erect to ascending, leafy to the apices. Leaves alternate, sessile, distichous, orbicular to suborbicular, 5-14 mm long, 3-7 mm wide, marcescent, folded, basally attenuate, subamplexicaulous, apically rounded, both surfaces densely lanate, the margins entire. Capitulescences solitary in upper leaf axils, subsessile. Capitula disciform, (6-) 7-8 (-9) mm high, 3-4 mm wide; involucre cylindrical; phyllaries 15-20, 4-5-seriate, imbricate, scarious, stramineous, hyaline at margin, the outer ovate, 4-6 mm long, 3-4 mm wide, concave, dorsally lanuginous, subacute, the inner linear to lanceolate, 7-8 mm long, 1-1.5 mm wide, glabrous, acute; marginal florets pistillate, 12-14, uniseriate, the corollas filiform, 4-5 mm long; disc florets hermaphroditic, ca. 10, the corollas narrowly tubular, 4-5 mm long. Achenes obovate to oblong, 1-1.5 mm long, brown, glandular; pappus bristles 5-6 mm long, fused basally, white.

DISTRIBUTION: Frequent among sheltered rocky sites in "jalca" formations of northern Perú (Departments of Cajamarca and La Libertad, 3000-3500 m).

Belloa plicatifolia is morphologically distinct and has no apparent close relatives. Its erect lanate branches with folded, distichous leaves give the stems a flattened appearance unknown elsewhere in the genus.

Additional material examined: PERU. Dept. Cajamarca. Prov. Cajabamba: Cajabamba-Luchubamba, 3800 m, 17 Nov 1983, Sagástegui et al. 11199 (F, HUT, MO). Prov. Cajamarca: Cumbemayo, 3200 m, 4 May 1985, Sagástegui & Tellez 12686 (F, HUT, MO). Prov. Contumazá: Cascabamba, 3050 m, 8 Jun 1977, Sagástegui et al. 9022 (F, HUT, MO); Cascabamba, 3100 m, 12 Jun 1981, Sagástegui et al. 10010 (F, HUT, MO); Cascabamba, 3000 m, 27 Jun 1983, Sagástegui et al. 10719 (F, HUT, MO). Dept. La Libertad. Prov. Otuzco: Salpo, Cerro Ragache, 3500 m, 23 May 1984, Sagástegui et al. 11631 (F, HUT, MO).

NEW COMBINATIONS

The following species are transferred to Belloa. All possess glabrous and glandulous achenes, pappus bristles fused at the base, and style branches with rounded apices.

Belloa cerrateae (Ferreyra) Sagást. & Dillon, comb. nov.

Mniodes cerratei Ferreyra, Bol. Soc. Peruana Bot. 8(1-2): 80. 1980. TYPE: Perú, Dept. Ancash, Prov. Bolognesi, Paso de Chonta, Dist. de Ticlllos, 4400 m, 29 Apr 1956, E. Cerrate 2549 (USM, holotype).

This taxon has heterogamous capitula and other characteristics typical of Belloa. All species of Mniodes are dioecious.

Belloa longifolia (Cuatr. & Arist.) Sagást. & Dillon, comb. nov. (Fig. 3, A-E).

Lucilia longifolia Cuatr. & Arist., Fl. Venezuela 10: 367. 1964.

This species is distributed from Venezuela to northern Perú. The Peruvian elements were initially thought to be new and an illustration prepared. It is included here as a supplement to the original illustration in the Flora de Venezuela.

Belloa pickeringii (A. Gray) Sagást. & Dillon, comb. nov.

Lucilia pickeringii A. Gray, Proc. Amer. Acad. Arts 5: 138. 1862.

Belloa radians (Benth.) Sagást. & Dillon, comb. nov.

Gnaphalium radians Benth., Planta Hartwegiana p. 207. 1839.

Gnaphalium evacoides Schultz-Bip., Bonplandia 4: 54. 1856, nom. nud.

Lucilia radians (Benth.) Cuatr., Trab. Mus. Nac. Ci. Nat., Ser. Bot. 33: 138. 1936.

Lucilia radians (Benth.) Steyermark, Fieldiana, Bot. 28 (3): 642. 1953.

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- Cabrera, A. L. 1958. El género Belloa Remy. Bol. Soc. Argent. Bot. 7: 79-85.
- Steyermark, J. A. 1953. Botanical Exploration in Venezuela-III. Fieldiana, Bot. 28(3): 449-678.

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EXPLANATION OF FIGURES

Fig. 1. Belloa turneri. A, habit; B, leaf (underside); C, capitulum; D, outer phyllary; E, inner phyllary; F, pistillate floret; G, hermaphroditic floret; H, style branches of pistillate floret; I, achene. (Drawn from Sagástegui et al. 10087, HUT).

Fig. 2. Belloa spathulifolia. A, habit; B, leaf (underside); C, capitulum; D, outer phyllary; E, inner phyllary; F, pistillate floret; G, hermaphroditic floret; H, anther; I, style branches of pistillate floret; J, achene. (Drawn from Sagástegui et al. 11695, HUT).

Fig. 3. Belloa longifolia. A, habit; B, capitulum; C, pistillate floret; D, hermaphroditic floret; E, achene. (Drawn from Sagástegui et al. 10060, HUT). Belloa plicatifolia. F, habit; G, capitulum; H, pistillate floret; I, hermaphroditic floret; J, style branches of pistillate floret; K, achene. (Drawn from Sagástegui et al. 10117, HUT).

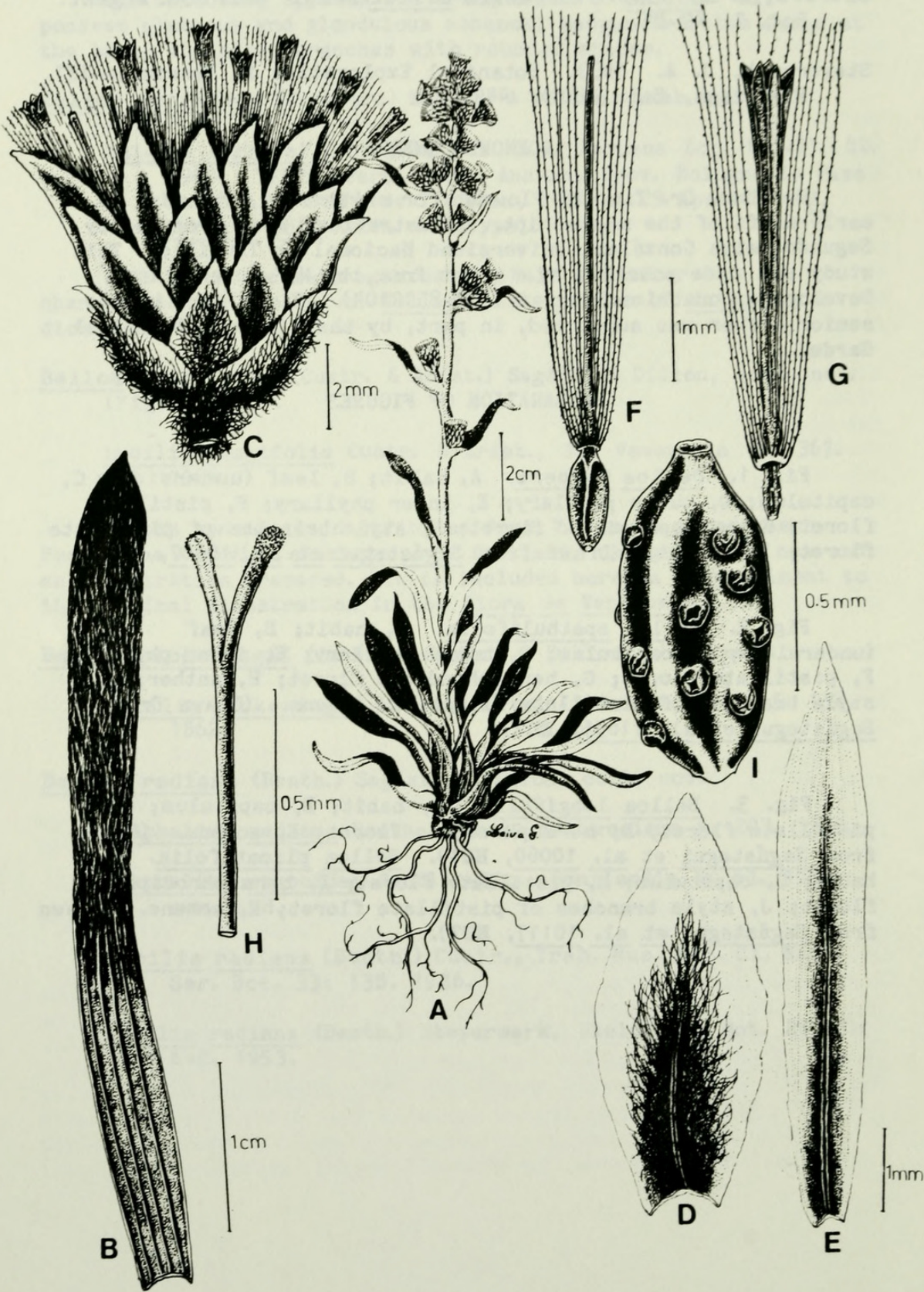


FIG. 1

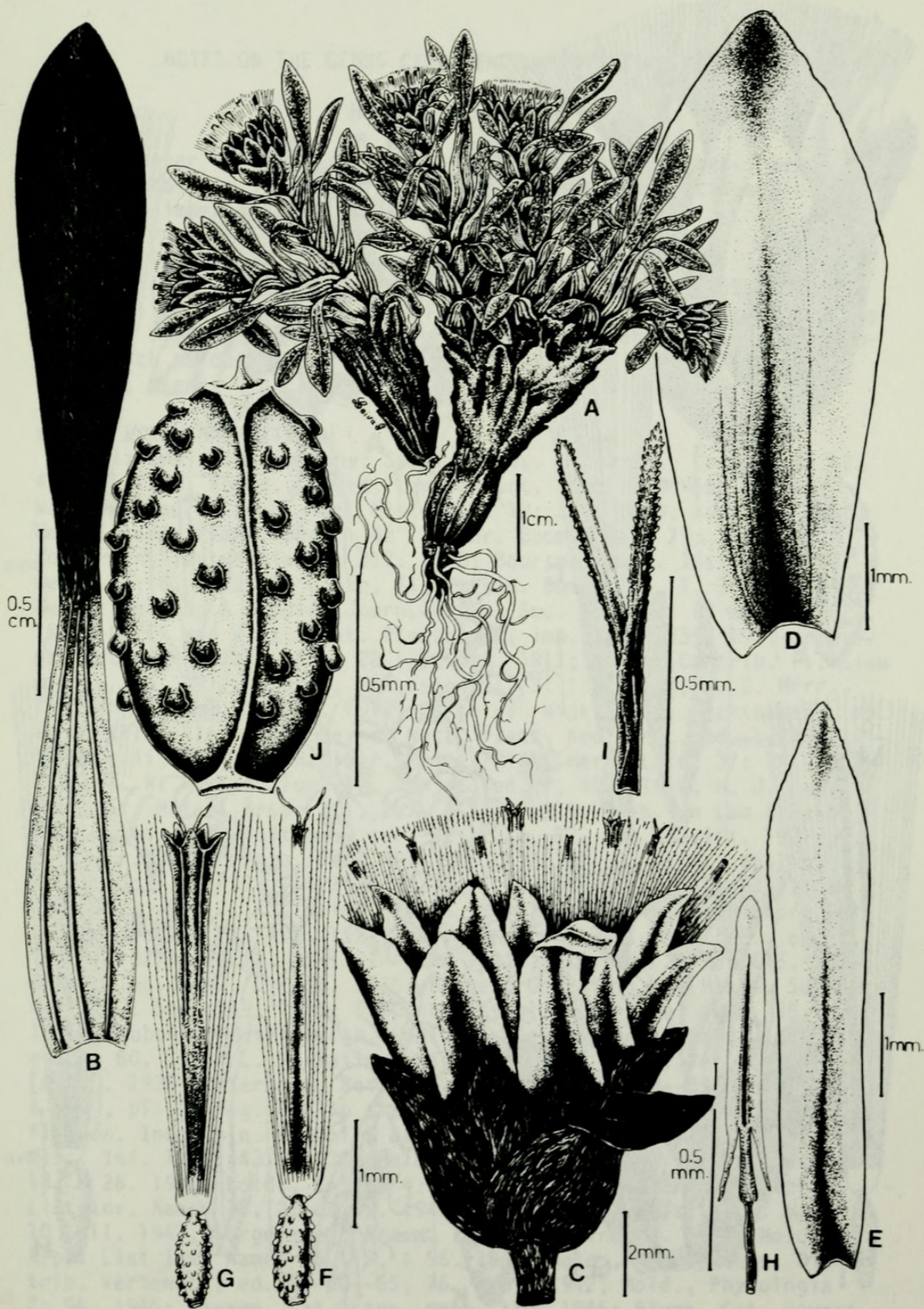


FIG. 2

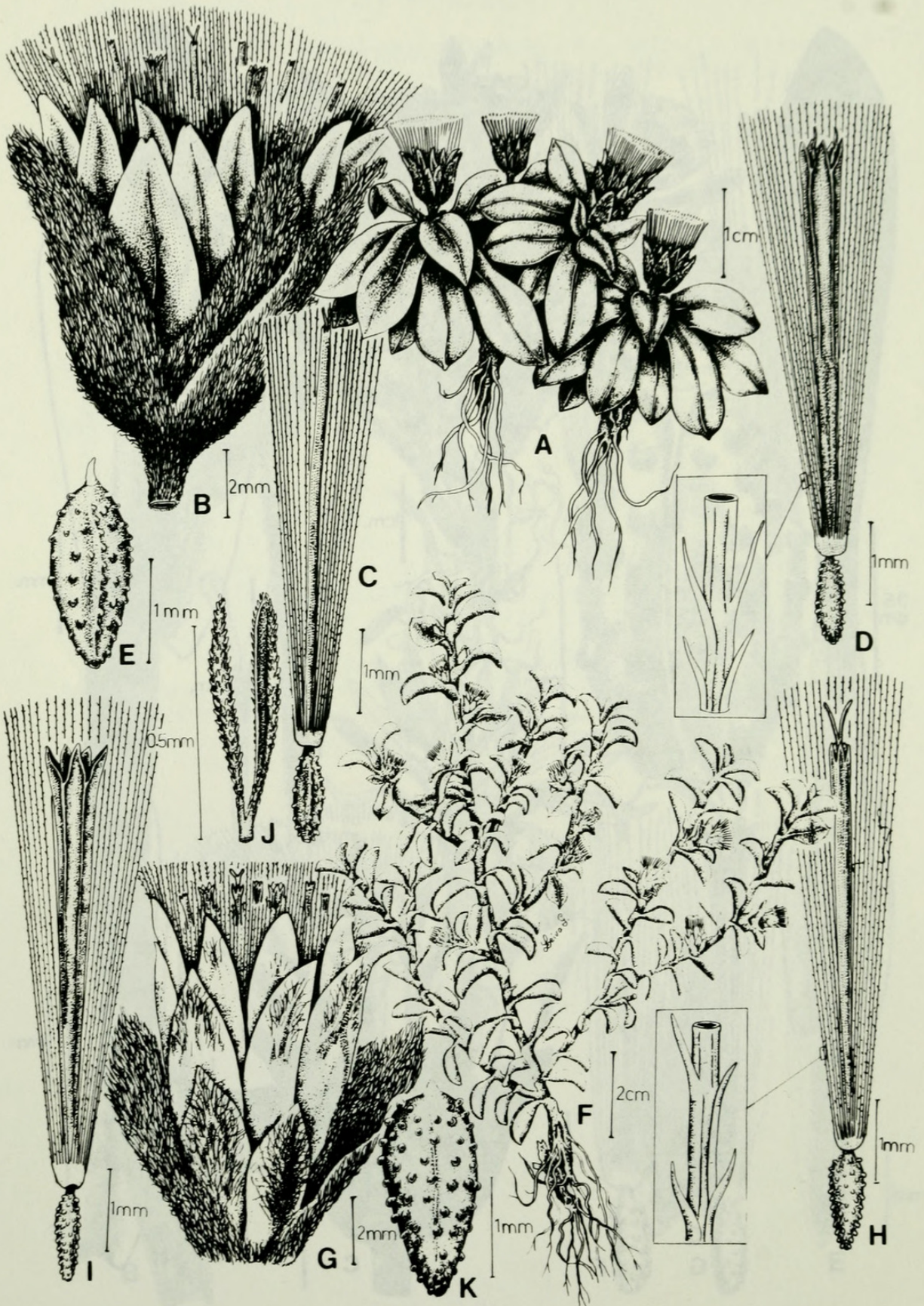


FIG. 3



Dillon, Michael and Sagastegui Alva, Abundio. 1985. "New species and combinations in Belloa (Inuleae-Asteraceae)." *Phytologia* 58, 392–400.
<https://doi.org/10.5962/bhl.part.14763>.

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